



UNIVERSITI
TEKNOLOGI
MARA

THE DOCTORAL RESEARCH ABSTRACTS

Volume: 11, Issue 11

April 2017

ELEVENTH ISSUE

INSTITUTE of GRADUATE STUDIES

IGS Biannual Publication

Name : SAFAWI ABDUL RAHMAN

Title : IDENTIFICATION OF THE ESSENCE OF INTELLIGENCE IN PROBLEM SOLVING BASED ON PRAGMATICISM'S THEORY OF INQUIRY

Supervisor : ASSOC. PROF. DR. HARYANI HARON (MS)
DR. SHARIFALILLAH NORDIN (CS)



In Artificial Intelligence (AI), the issue of the essence of intelligence is disputable in which this issue leads to the difficulty in understanding the intelligence. This research enters the challenge of identifying the essence of intelligence by re-visiting the tenet of intelligent behavior due to that intelligent behavior is amenable to reflect intelligence. The investigation into the intelligent behavior leads to the finding that the process and intelligent process are the underpinning principle of behavior. The research progresses to identify the intelligent processes that are said to be truly intelligent. As a result, the problem solving processes are found to be essential source for intelligent processes because problem solving is the key for intelligence. By disregarding the existing problem solving frameworks, this study explores the Pragmaticism's theory of inquiry, a general philosophical idea that penetrated many academic realms such as in AI since 1950s. The re-exploration of Pragmaticism's abduction, deduction and induction yields seven intelligent processes namely invention, selection, entertainment, analysis, demonstration, operation and justification. These intelligent processes are represented using common terminologies of intelligent behaviors namely reasoning, inventing,

selecting, adapting, planning, acting and learning in which these processes are identified as the repertoire of intelligent behaviors. The research progresses to examine and validate these intelligent processes or behaviors into actual problem solving domain of fern identification. This kind of examination has made this research fall into qualitative method. The respondents are semi-expert group of which the fern's identification is a challenging subject to them. The think-aloud and structured questions that consist of closed and open-ended has been used for data collection. The Atlas.ti has been used to produce quotations and codes of transcripts of think-aloud and structured questions. The interpretive method of Productive Hermeneutic Analysis (PHA) is used in the data analysis. The analysis and discussion are made based on the magnitude of respondent's conducts exhibited in the think-aloud and their explanations about the presence of intelligent processes in the fern's identification exercise coded into the Atlas.ti. By the respondent's validation and acknowledgement of the presence of intelligent processes, this study suggests the repertoire of eight intelligent behaviors as adequately represent the essence of intelligence.